

ABSTRACT OF THE DISCLOSURE

The present invention provides a magnetoresistive element that has excellent magnetoresistance characteristics over a conventional
5 magnetoresistive element. The magnetoresistive element is produced by a method including heat treatment at 330°C or more and characterized in that the longest distance from a centerline of a non-magnetic layer to the interfaces between a pair of ferromagnetic layers and the non-magnetic layer is not more than 10 nm. This element can be produced, e.g., by
10 forming an underlying film on a substrate, heat treating the underlying film at 400°C or more, decreasing surface roughness by irradiating the surface of the underlying film with an ion beam, and forming the ferromagnetic layers and the non-magnetic layer. The longest distance is reduced relatively even when M¹ (at least one element selected from Tc, Re, Ru, Os, Rh, Ir, Pd,
15 Pt, Cu, Ag and Au) is added to the ferromagnetic layers in the range of 2 nm from the interfaces with the non-magnetic layer.